

CLAIMS

1. A dye-sensitized solar cell, comprising:
 - a pair of oppositely arranged substrates;
 - a semiconductor electrode, a first collector electrode and a catalyst layer disposed between the substrates, the semiconductor electrode containing a sensitizing dye, the first collector electrode being capable of collecting electrons from the semiconductor electrode;
 - an electrolyte layer retained at least between the semiconductor electrode and the catalyst layer,
 - wherein at least part of at least one of the substrates has a light-transmitting property; and wherein the first collector electrode contains tungsten.
2. The dye-sensitized solar cell according to claim 1, further comprising a second collector capable of collecting electrons from the catalyst layer, wherein the second collector electrode contains tungsten.
3. A dye-sensitized solar cell, comprising:
 - a first base member having a first substrate provided with a light-transmitting property, a light-transmitting conductive layer formed on a surface of the first substrate and a semiconductor electrode formed on a surface of the light-transmitting conductive layer and containing a sensitizing dye;
 - a second base member having a second substrate and a catalyst layer formed on a surface of the second substrate in such a manner that the catalyst layer faces the semiconductor electrode;
 - an electrolyte layer formed between the semiconductor electrode and the catalyst layer; and
 - one of the followings: (A) a first collector electrode formed between the first substrate and the light-transmitting conductive layer, in the light-transmitting conductive layer or on the surface of the light-transmitting conductive layer and containing tungsten; (B) a second collector electrode formed between the second substrate and the catalyst layer and containing tungsten; and (C) first and second

collector electrodes, the first collector electrode being formed between the first substrate and the light-transmitting conductive layer, in the light-transmitting conductive layer or on the surface of the light-transmitting conductive layer, the second collector electrode being formed between the second substrate and the catalyst layer, at least one of the first and second collector electrodes containing tungsten.

4. The dye-sensitized solar cell according to claim 3, further comprising a conductive layer between the second substrate and the catalyst layer.

5. The dye-sensitized solar cell according to claim 4, wherein the second collector electrode is formed between the conductive layer and the catalyst layer, in the conductive layer or on a surface of the conductive layer.

6. The dye-sensitized solar cell according to any one of claims 3 to 5, wherein the second substrate is made of ceramic.

7. The dye-sensitized solar cell according to any one of claims 3 to 6, wherein each of the first and second collector electrodes has a planar form in a grid pattern, a comb pattern or a radial pattern.

8. The dye-sensitized solar cell according to any one of claims 3 to 7, wherein the first collector electrode is made of metal wire and arranged between the first substrate and the light-transmitting conductive layer with one part of the first collector electrode being embedded in the first substrate.

9. The dye-sensitized solar cell according to any one of claims 3 to 7, wherein the light-transmitting conductive layer has a first light-transmitting conductive layer portion in contact with the first substrate and a second light-transmitting conductive layer portion in contact with the first light-transmitting conductive layer portion; and wherein the first collector electrode is made of metal wire and arranged between the first and second light-transmitting conductive layer portions with one part of the first collector electrode being embedded in the first substrate and the first light-transmitting

conductive layer portion.

10. The dye-sensitized solar cell according to any one of claims 3 to 7, wherein the first collector electrode is made of metal wire and arranged in the surface of the light-transmitting conductive layer with one part of the first collector electrode being embedded in the first substrate and the light-transmitting conductive layer and the other part of the first collector electrode being covered by an adhesive layer.

11. The dye-sensitized solar cell according to any one of claims 3 to 7, wherein the first collector electrode is made of metal wire, arranged on the surface of the light-transmitting conductive layer and fixed to the light-transmitting conductive layer by an adhesive layer.

12. The dye-sensitized solar cell according to any one of claims 3 to 11, wherein the second collector electrode is made of metal wire and arranged between the second substrate and the catalyst layer with one part of the second collector electrode being embedded in the second substrate.

13. The dye-sensitized solar cell according to any one of claims 4 to 11, wherein the second collector electrode is made of metal wire and arranged between the second substrate and the conductive layer with one part of the second collector electrode being embedded in the second substrate.

14. The dye-sensitized solar cell according to any one of claims 4 to 11, wherein the conductive layer has a first conductive layer portion in contact with the second substrate and a second conductive layer portion in contact with the first conductive layer portion; and wherein the second collector electrode is made of metal wire and arranged between the first and second conductive layer portions with one part of the second collector electrode being embedded in the second substrate and the first conductive layer portion.

15. The dye-sensitized solar cell according to any one of claims 4 to 11, wherein

the second collector electrode is made of metal wire and arranged in the surface of the conductive layer with one part of the second collector electrode being embedded in the second substrate and the conductive layer and the other part of the second collector electrode being covered by an adhesive layer.

16. The dye-sensitized solar cell according to any one of claims 4 to 11, wherein the second collector electrode is made of metal wire, arranged on the surface of the conductive layer and fixed to the conductive layer by an adhesive layer.

17. The dye-sensitized solar cell according to any one of claims 3 to 16, wherein a seal of resin or glass is provided in space between the first substrate or the light-transmitting conductive layer and the second substrate or the catalyst layer at a location around the semiconductor electrode.

18. The dye-sensitized solar cell according to any one of claims 4 to 16, wherein a seal of resin or glass is provided in space between the first substrate or the light-transmitting conductive layer and the second substrate, the catalyst layer or the conductive layer at a location around the semiconductor electrode.